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NOTICE OF ALLOWANCE AND FEE(S) DUE

22850 7590 02/13/2009

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

BERNSHTEYN, MICHAEL

ART UNIT

PAPER NUMBER

1796

DATE MAILED: 02/13/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,614

08/05/2005

Joerg Issberner

262338USOPCT

8527

TITLE OF INVENTION: COPOLYMERS FOR AVOIDING DEPOSITS IN WATER SUPPLY SYSTEMS, PRODUCTION AND USE THEREOF

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	05/13/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,614 08/05/2005 Joerg Issberner 262338US0PCT 8527

TITLE OF INVENTION: COPOLYMERS FOR AVOIDING DEPOSITS IN WATER SUPPLY SYSTEMS, PRODUCTION AND USE THEREOF

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$300 \$0 \$1810 05/13/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
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BERNSHTEYN, MICHAEL 1796 526-309000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,614	08/05/2005	Joerg Issberner	262338US0PCT	8527
22850	7590	02/13/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			BERNSHTEYN, MICHAEL	
			ART UNIT	PAPER NUMBER
			1796	
DATE MAILED: 02/13/2009				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/517,614	ISSBERNER ET AL.	
	Examiner	Art Unit	
	MICHAEL M. BERNSHTEYN	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/05/2008.
2. ☒ The allowed claim(s) is/are 1-3,5,6 and 10-24.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| <p>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____</p> <p>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</p> | <p>5. <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____.</p> <p>7. <input type="checkbox"/> Examiner's Amendment/Comment</p> <p>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</p> <p>9. <input type="checkbox"/> Other _____.</p> |
|---|---|

/Michael M. Bernshteyn/
Examiner, Art Unit 1796

DETAILED ACTION

1. This Office Action is a response to the remarks filed November 5, 2008. No claims have been amended, added or cancelled.
2. Applicant's arguments, see remarks, filed November 5, 2008, with respect to claims 1-3, 5, 6 and 10-24 have been fully considered and are persuasive. The rejection of claims 1-3, 5, 6 and 10-24 under 35 U.S.C. 112, 1ST paragraph has been withdrawn.
3. Claims 1-3, 5, 6 and 10-24 are pending.

Allowable Subject Matter

1. Claims 1-3, 5, 6 and 10-24 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter of claims 1-3, 5, 6 and 10-24: the present claims are allowable over the closest references: Fujikake et al. (U.S. Patent 6,084,032), Behr et al. (U.S. Patent 5,756,624) and Werres (U. S. Patent 5,656,177).

Fujikake discloses a polymer composition comprises (A) a crosslinked polymer comprising (a) an α,β -unsaturated carboxylic acid and (b) a compound having at least two ethylenically unsaturated groups, and (B) at least one polymer comprising N-vinylpyrrolidone as essential monomer (abstract).

The α,β -unsaturated carboxylic acid (a) is not limited to any particular species but includes, among others, acrylic acid, methacrylic acid, crotonic acid, maleic acid, itaconic acid, fumaric acid and other olefinic unsaturated carboxylic acids. These may

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be used either singly or in combination as a mixture of two or more. Among them, acrylic acid is most preferred since it is readily available at low cost and can give polymers having good performance (col. 1, line 63 through col. 2, line 4).

The compound (b) having at least two ethylenically unsaturated groups is not limited to any particular species and includes, among others, acrylate esters with two or more acryloyl moieties as derived from polyols such as ethylene glycol, propylene glycol, polyoxyethylene glycol, polyoxypropylene glycol, glycerol, polyglycerol, trimethylolpropane, pentaerythritol, saccharose, sorbitol, etc. (col. 2, lines 5-22).

The above-mentioned compound (b) having at least two ethylenically unsaturated groups is used preferably at an addition level of 0.05 to 10% by weight based on the crosslinked polymer (A) (col. 2, lines 23-26).

Fujikake discloses that said α,β -unsaturated compound is not limited to any particular species but includes, among others, acrylate esters such as methyl acrylate, ethyl acrylate, isopropyl acrylate, butyl acrylate, octyl acrylate, 2-ethylhexyl acrylate, decyl acrylate, lauryl acrylate, stearyl acrylate, glycidyl acrylate, etc. These species are preferably used at an addition level of 0.1 to 20 parts by weight per 100 parts by weight of polymer (A) (col. 4, lines 20-49).

Fujikake discloses that the polymer composition containing carboxyl group can be produced by polymerizing in advance the monoethylenically unsaturated carboxylic acid (a) and the compound (b) having at least two ethylenically unsaturated groups, drying the thus-obtained crosslinked polymer (A) (col. 3, 46-50). Acrylic acid-based, crosslinked polymer compositions containing carboxyl group were prepared using AIBN

as the radical polymerization catalyst (col. 7, lines 52-55). Since the polymer composition containing carboxyl group carries carboxyl groups, when dissolved in water and then neutralized with a base such as sodium hydroxide or triethanolamine, gives a neutralized viscous liquid excellent in thickening property and flow characteristics (col. 4, lines 50-55).

Fujikake discloses that the concentration of the copolymerizable constituents in the aqueous polymerization mixture is within the claimed range (Examples 1-1 to 1-4, col. 5, line 28 through col. 7, line 20).

Behr discloses a copolymer consisting of monomer units derived monomers consisting of:

(A) 10 to 50% by weight of a terpene with no conjugated double bonds,

B) 20 to 50% by weight of a member selected from the group consisting of olefinically unsaturated monocarboxylic acids containing 3 to 5 carbon atoms and anhydrides thereof, and olefinically unsaturated dicarboxylic acids containing 3 to 5 carbon atoms and anhydrides thereof, and

(C) 40 to 50% by weight of an ester selected from the group consisting of esters and semiesters of olefinically unsaturated monocarboxylic containing 3 to 5 carbon atoms and esters and semiesters of olefinically unsaturated dicarboxylic acids containing 3 to 5 carbon atoms, with the proviso that the sum total of said monomers is 100% by weight (abstract).

Behr exemplifies that weight average molecular weight of the obtained copolymer is between 1,100 and 9,600 (Examples 1-32, col. 3, line 25 through col.9, line 2).

Behr discloses that the copolymers may be used as tackifiers in adhesives, in paints and as binders for printing inks, textile sizing agents, builders and hardeners. Copolymers with esters to which a relatively long-chain alcohol radical is attached are suitable for hydrophobicization, for example for hydrophobicizing shoe and clothing leather (col. 3, lines 117-23).

Werres discloses the use of oil-in-water emulsion to prevent slime formation and inhibit the proliferation of microbes in water carrying system. The emulsion contains at least one of the following active substances as a component of the oil-phase: a saturated or unsaturated, open-chain or cyclic, normal or isomeric hydrocarbon; an acyclic, preferably monocyclic and/or bicyclic terpene, such as a terpene hydrocarbon and/or terpene alcohol; etc. The proportion of oil phase in these emulsions is between 1 and 90 wt. %. The emulsions are used in concentrations of 1 to 200 ppm (abstract).

Werres discloses that oil and water emulsions can be used as agents for the prevention of slime formation caused by microorganisms and for the prevention of microbial growth in water-bearing systems because Water carrying systems, such as water and waste water piping, cooling or heating cycles, cooling lubricant systems, drilling fluids, or industrial process waters for the transport of matter contain a variety of microorganisms (col. 1, lines 5-14). Also, these oil-water emulsions are suitable for the use against microorganisms in aqueous systems in the manufacture of sugar from sugar beets (col. 2, lines 33-35).

However, Fujikake, Behr and Werres do not disclose or fairly suggest instantly claimed clear, water-soluble copolymer derived from a monomer composition,

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particularly comprising: of a₁) a monoethylenically unsaturated, acid-group-containing monomer selected from the group consisting of monocarboxylic acids and dicarboxylic acids; a₂) a monoethylenically unsaturated sulfonic acids acid; and b) a copolymerizable hydrophobic monocyclic terpene hydrocarbon; the method for synthesis of a clear, water-soluble copolymer, and the method for preventing organic, inorganic and mixed organic/inorganic deposits in a water-conveying system, as per claims 1, 13 and 17.

4. As of the date of this Notice of Allowability, the Examiner has not located or identified any reference that can be used singularly or in combination with another references including Fujikake et al., Behr et al. and Werres et al. to render the present invention anticipated or obvious to one of ordinary skill in the art.

5. In the light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delay, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reason for Allowance".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL M. BERNSHTEYN whose telephone number is (571)272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/
Primary Examiner, Art Unit 1796
/M. M. B./
Examiner, Art Unit 1796

/Michael M. Bernshteyn/
Examiner, Art Unit 1796